REMARKS

Status of the Claims

Claims 1, 11, and 12 have been amended, no new matter has been added.

Claims 2-10 have been amended to remove reference numerals in accordance with U.S. Patent Office practice, no new matter has been added.

Claims 1-12 are pending.

Amendments to the Specification

The Examiner has objected to the specification for informalities. The specification has been amended make proper reference to Figure 3 and Figure 4 to correct a clerical error. No new matter has been added.

Objections to the Drawings

Figures 1 and 2 have been labeled "Prior Art" in order to address the Examiner's objection to the drawings in Part 2.a of the Office Action.

With respect to the Examiners objections to the drawings in Parts 2.b, c, d, and g of the Office Action, the specification has been amended to correct a clerical error. Several reference numbers used in the specification were incorrect and many were off by a factor of ten due to a clerical error. The specification has been amended to provide the correct reference numbers which correspond to the reference numbers used in the drawings. Accordingly, the Examiner's objections have been addressed. No new matter has been added.

Figure 5 has been amended to include reference number 64 to identify the "non-hollow lateral surface." Figures 3 and 4 have been amended to show valve plate 40 as similarly shown in Figures 1 and 2. Support for this amendment can be found in Figures 1 and 2 and claim 11 as

originally filed. Figures 4 and 5 have been amended to include reference number 9 to identify the "chamber." No new matter has been added. Accordingly, the Examiner's objections in Part 2.d of the Office Action have been addressed.

Figure 5 has been amended to include reference number 64 to identify the "non-hollow lateral surface" to address the Examiner's objection in Part 2.e of the Office Action. No new matter has been added.

Figures 1 and 2 have been amended to include different reference numbers to address the Examiner's rejection in Part 2.g and the specification has been amended to include the corresponding reference numbers. No new matter has been added.

Claim Objections

The Examiner has objected to claim 6 because the Examiner contends the recitation of a "non-hollow lateral surface" fails to provide a clear limitation ascertainable be one of ordinary skill in the art. Figure 5 has been amended to include reference numeral 64 identifies the solid wall of the tubular body 60 of the spring means which the specification identifies as the "non-hollow lateral surface 64." Accordingly, one of ordinary skill in the art would understand that the "non-hollow lateral surface" refers to the solid wall of the tubular body.

Rejections Under 35 U.S.C. § 102

Claims 1-7 and 11-12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,345,693 to Thomin et al. ("Thomin"). Applicants traverse the rejection.

The prior art relied upon by the Examiner discloses a pump with deformable pumping bellows 12. The bellows 12 may be made from an assembly of Belleville washers that are welded together. An end wall 13 covers the final fold of the bellows 12. The bellows are disposed within a cylinder 6 to create two pumping chambers, one chamber 10 outside the bellows and another chamber 11 inside the bellows. (Thomin, column 3, lines 34-59; and Fig. 2). The end wall 13 of the

bellows is connected to the electromagnetically actuated control rod 28. Actuation of the control rod 28 causes the bellows 12 to compress and expand inside the cylinder 6 which causes the pumping action. Thus, the bellows 12 are responsible for the compression.

In contrast, amended claim 1 recites a "piston reciprocating inside [a] cylinder, the cylinder being closed by a cylinder head defining between a top portion of the piston and said cylinder head a compression chamber." Thus, the compression chamber is defined between a top portion of the piston and the cylinder head. Further, amended claim 1 recites "an actuating means coupled to the bottom portion of the piston operatively coupling the piston to the motor; and at least one spring means, mounted to the resonant assembly actuating means." Thus, the at least one spring means is mounted to the actuating means, which is mounted to the bottom portion of the cylinder. Thomin fails to disclose this arrangement because the bellows of Thomin are responsible for the compression and thus form a part of the compression chamber.

For the foregoing reasons, claim 1 is not anticipated by Thomin. Claims 2-7 and 11-12 depend from claim 1 and are patentable for at least the same reasons as claim 1. Applicants respectfully request reconsideration and withdrawal of the rejection.

Further, dependent claim 11 recites an arrangement "wherein the tubular body [of the spring means] has an end hermetically affixed to the cylinder and the opposite end hermetically affixed to the actuating means, *in order to block the fluid communication between the compression chamber and the exterior of the cylinder through gaps existing between the piston and the cylinder*. Thomin fails to disclose this arrangement because Thomin discloses bellows 12 that are completely disposed within the cylinder 6 wherein the bellows 12 form a part of the compression chamber. Therefore, the bellows 12 disclosed by Thomin do not block fluid communication through gaps existing between a piston and a cylinder. Accordingly, claim 11 is not anticipated by Thomin for at least this additional reason.

Amended dependent claim 12 recites "another spring means in the form of a tubular body . . . said tubular body having at least part of the extension thereof folded in circumferential

sectors that are symmetric in relation to the axis of said tubular body, each circumferential sector being elastically deformed in the axial direction upon displacement of the piston." Thomin fails to disclose such "another spring means" as recited in claim 12. Accordingly, claim 12 is not anticipated by Thomin for at least this additional reason.

Rejections Under 35 U.S.C. § 103

Claims 8-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Thomin in view of U.S. Patent No. 6,485,267 to Imai et al. ("Imai"). Applicants traverse the rejection.

As discussed above, Thomin fails to anticipate claim 1. Imai discloses a control valve that includes bellows 146 that are disposed within a pressure sensitive chamber 145a, wherein the bellows 146 are designed to actuate a plunger 133. (Imai, column 5, lines 46-50). Thus, Imai also fails to disclose a "piston reciprocating inside [a] cylinder, the cylinder being closed by a cylinder head defining between a top portion of the piston and said cylinder head a compression chamber" and "an actuating means coupled to the bottom portion of the piston operatively coupling the piston to the motor; and at least one spring means, mounted to the resonant assembly actuating means," as recited in amended claim 1.

Accordingly, neither Thomin or Imai disclose or suggest all the claimed features of claim 1, either separately or in combination. Claims 8-10 depend from claim 1 and are patentable for at least the same reasons as claim 1. Applicants respectfully request reconsideration and withdrawal of the rejection.

CONCLUSION

Each and every point raised in the Office Action dated April 18, 2007 has been addressed on the basis of the above amendments and remarks. In view of the foregoing it is believed that claims 1-12 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

By _____

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Attachments

REPLACEMENT SHEET